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NOTICES FROM THE LICK OBSERVATORY.*

Prepared by Members of the Staff.

The Double Star OΣ 21.

In July of the present year I found that the 6.3-magnitude star, $6\frac{1}{2}^{\mathrm{m}}$ preceding *ϕ Andromedæ* and 7′ north of it, is a close double star. Measures on four nights give the following result:—

1904.54 361°.0 0″.22 6.2-8.0 magnitudes.

In view of the past history of this star, this discovery is both interesting and surprising.

It was first noted as a double star by Otto Struve in 1845, and was measured by him on four nights, between 1845 and 1851, with accordant results, the mean of which is: 170°.6 0″.56 6.9-8.2 magnitudes. This pair is known as OΣ 21, and was measured in 1884 by both Seabroke and Smith with results in fair agreement with Struve's; and again on one night in 1898 by Hussey, who obtained 160°.7 and 0″.74.

If this were the complete micrometric history of the star it would be very interesting, because of the great change apparently observed between 1898 and 1904; but in view of the meagerness of the observations there would be nothing very surprising about it.

But from the account given by Professor Hussey in his "Observations of the Pulkowa Double Stars" (*Lick Observatory Publications,* vol. V, p. 39), it appears that Dembowski could not measure this pair in 1864, 1865 or 1878; that Mädler, in 1845, measured a seventh-magnitude star a little preceding this star, obtaining 45°.1 0″.97, and supposed he was measuring OΣ 21; that Burnham measured Mädler's pair in 1878, 1879, and 1891, and expressly stated that in the two former years he could not find any other pair in that vicinity; and finally, that

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HUSSEY himself was unable to see O Σ 21 double on many nights in 1898 and 1900 (also in 1902, see *L. O. Bulletin*, No. 40), even with the 36-inch telescope. As Professor HUSSEY points out, it seems impossible to reconcile his positive measure with the subsequent negative results, and equally dfficult to explain the agreement of his measure with OTTO STRUVE'S if some other pair was observed by either by mistake.

My measures only add to the puzzle, for it does not seem possible that the new companion can be identical either with the one measured by OTTO STRUVE or with the one seen by Professor HUSSEY. The explanation must be left to the future.

September 2, 1904. R. G. AITKEN.

UNSUCCESSFUL SEARCH FOR PERIODIC COMETS.

It is generally best to keep silent about searches of any kind that result unsuccessfully, but occasionally it happens that failure has a value only second to success. This seems to apply with special force to the search for periodic comets whose orbits are supposed to be well known, and whose position in the sky, according to the predicted motion, is favorable for observation. I therefore wish to place on record the fact that I have looked for every periodic comet predicted to return to the neighborhood of the earth during the past two years, using the 36-inch telescope under the best obtainable conditions. With the exception of BROOKS'S comet, 1889 V, 1896 VI, which was found close to its predicted place on the first night's search, none of the comets looked for have been seen. Some, like PERRINE'S comet last year, and TEMPLE'S comet (1873 II) this year were so nearly in line with the Sun that their position could hardly be regarded as favorable. Others, like GIACOBINI'S comet last year and WOLF'S comet the present year, were not far from opposition at the time of search, and the failure to see them must be due either to the extreme faintness of the objects or to the uncertainty of the predicted positons. It is not feasible with a telescope as large as the 36-inch to examine a very large sky area for a faint comet. My practice has been to chart the predicted position of the comet and to examine minutely with a low-power eye-piece about a square degree of the sky about this position; then, more rapidly, several more square degrees along the line of predicted motion. R. G. AITKEN.

September 5, 1904.